

The code for HW2 is separated into question_1.py 、 question_2.py and to represent each question in HW2. I have written my function in function.py for question_1.py and question_2.py to use. I have written environment information in requirements.txt.

Question 1

(a)I have saved MV.txt including all Motion Vector for each Macroblock. The answer is as follows.

-----MV.txt-----

Block 0 - (0,0)

Block 1 - (15,15)

Block 2 - (15,15)

Block 3 - (15,15)

Block 4 - (15,15)

Block 5 - (15,15)

Block 6 - (-12,13)

Block 7 - (7,15)

Block 8 - (13,15)

Block 9 - (15,15)

Block 10 - (-1,15)

Block 11 - (15,15)

Block 12 - (15,15)

Block 13 - (15,15)

Block 14 - (15,15)

Block 15 - (15,15)

Block 16 - (15,15)

Block 17 - (0,15)

Block 18 - (2,15)

Block 19 - (-15,-14)

Block 20 - (0,5)

Block 21 - (-1,15)

Block 22 - (15,15)

Block 23 - (15,15)

Block 24 - (15,15)

Block 25 - (15,15)

Block 26 - (15,15)

Block 27 - (-11,2)

Block 28 - (0,0)
Block 29 - (-5,-1)
Block 30 - (14,13)
Block 31 - (15,15)
Block 32 - (-9,15)
Block 33 - (14,1)
Block 34 - (-8,4)
Block 35 - (-14,7)
Block 36 - (8,13)
Block 37 - (-5,15)
Block 38 - (12,15)
Block 39 - (15,15)
Block 40 - (15,15)
Block 41 - (5,15)
Block 42 - (15,15)
Block 43 - (-1,15)
Block 44 - (2,0)
Block 45 - (7,15)
Block 46 - (-12,15)
Block 47 - (15,15)
Block 48 - (11,15)
Block 49 - (3,15)
Block 50 - (15,15)
Block 51 - (15,15)
Block 52 - (15,15)
Block 53 - (-3,15)
Block 54 - (-1,15)
Block 55 - (1,12)
Block 56 - (10,15)
Block 57 - (13,15)
Block 58 - (15,15)
Block 59 - (15,15)
Block 60 - (15,15)
Block 61 - (10,15)
Block 62 - (1,15)
Block 63 - (15,8)
Block 64 - (15,9)
Block 65 - (-1,-2)

Block 66 - (1,1)
Block 67 - (1,15)
Block 68 - (8,15)
Block 69 - (14,15)
Block 70 - (15,15)
Block 71 - (5,13)
Block 72 - (0,15)
Block 73 - (-12,15)
Block 74 - (-15,-5)
Block 75 - (4,-3)
Block 76 - (-1,-5)
Block 77 - (0,0)
Block 78 - (-14,4)
Block 79 - (-13,15)
Block 80 - (6,15)
Block 81 - (-4,15)
Block 82 - (14,8)
Block 83 - (-12,8)
Block 84 - (-13,15)
Block 85 - (0,0)
Block 86 - (15,15)
Block 87 - (-1,-3)
Block 88 - (6,-3)
Block 89 - (-4,-1)
Block 90 - (-11,-1)
Block 91 - (-14,-1)
Block 92 - (-15,-12)
Block 93 - (15,-1)
Block 94 - (4,-1)
Block 95 - (-13,-1)
Block 96 - (15,-2)
Block 97 - (15,-1)
Block 98 - (-1,-1)

(b) fig.1 is the collage image for all the reference blocks as a frame that corresponds to foreman_qcif_1_rgb.bmp

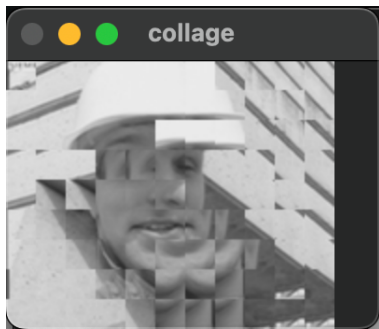


Fig.1

Question 2

- (a) I have saved q2_MV.txt including all the prediction modes with their corresponding block. The answer is as follows.

-----MV.txt-----

Block 0 - -1
Block 1 - 1
Block 2 - 1
Block 3 - 1
Block 4 - 1
Block 5 - 1
Block 6 - 1
Block 7 - 1
Block 8 - 1
Block 9 - 1
Block 10 - 1
Block 11 - 0
Block 12 - 0
Block 13 - 1
Block 14 - 1
Block 15 - 0
Block 16 - 1
Block 17 - 1
Block 18 - 2
Block 19 - 2
Block 20 - 2
Block 21 - 2
Block 22 - 0
Block 23 - 1
Block 24 - 2

Block 25 - 0
Block 26 - 1
Block 27 - 1
Block 28 - 1
Block 29 - 1
Block 30 - 1
Block 31 - 2
Block 32 - 2
Block 33 - 0
Block 34 - 1
Block 35 - 1
Block 36 - 1
Block 37 - 1
Block 38 - 1
Block 39 - 1
Block 40 - 2
Block 41 - 0
Block 42 - 1
Block 43 - 2
Block 44 - 0
Block 45 - 1
Block 46 - 1
Block 47 - 0
Block 48 - 0
Block 49 - 1
Block 50 - 0
Block 51 - 0
Block 52 - 1
Block 53 - 2
Block 54 - 2
Block 55 - 0
Block 56 - 1
Block 57 - 0
Block 58 - 0
Block 59 - 1
Block 60 - 2
Block 61 - 0
Block 62 - 2

Block 63 - 1
Block 64 - 0
Block 65 - 2
Block 66 - 0
Block 67 - 2
Block 68 - 2
Block 69 - 2
Block 70 - 0
Block 71 - 0
Block 72 - 0
Block 73 - 0
Block 74 - 1
Block 75 - 1
Block 76 - 0
Block 77 - 0
Block 78 - 2
Block 79 - 2
Block 80 - 2
Block 81 - 2
Block 82 - 0
Block 83 - 1
Block 84 - 0
Block 85 - 1
Block 86 - 2
Block 87 - 1
Block 88 - 0
Block 89 - 2
Block 90 - 0
Block 91 - 0
Block 92 - 2
Block 93 - 2
Block 94 - 2
Block 95 - 0
Block 96 - 0
Block 97 - 1
Block 98 - 1

(b) fig.2 is the collage image for all the reference blocks as a frame that corresponds

to foreman_qcif_0_rgb.bmp

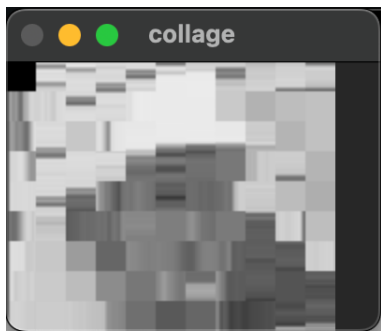


Fig.2